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**BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES**

Application Number: 10/598,647  
Filing Date: September 07, 2006  
Appellant(s): DEL PRADO PAVON ET AL.

\_\_\_\_\_  
Hay Yeung Cheung  
For Appellant

**EXAMINER'S ANSWER**

This is in response to the appeal brief filed 1/29/2010 appealing from the Office action mailed 9/1/2009.

**(1) Real Party in Interest**

A statement identifying by name the real party in interest is contained in the brief.

**(2) Related Appeals and Interferences**

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

**(3) Status of Claims**

The statement of the status of claims contained in the brief is correct.

**(4) Status of Amendments After Final**

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

**(5) Summary of Claimed Subject Matter**

The summary of claimed subject matter contained in the brief is correct.

**(6) Grounds of Rejection to be Reviewed on Appeal**

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

**(7) Claims Appendix**

The copy of the appealed claims contained in the Appendix to the brief is correct.

**(8) Evidence Relied Upon**

2004/0264428	Choi et al.	12-2004
2005/0052995	Gu et al.	03-2005

2005/0169292

Young, Song-Lin

08-2005

IEEE Std 802.15.3-2003

### **(9) Grounds of Rejection**

The following ground(s) of rejection are applicable to the appealed claims:

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 6, 14, 15, 20, 28, 35-36, 40 and 45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Young (US 2005/0169292) in view of Choi (US 2004/0264428).

Regarding claim 1, Young discloses a method for host-device communication in a first Wireless Universal Serial Bus (WUSB) network including a host and at least one connected device (see Abstract, [0026]-[0027]), comprising:  
beaconing according to a distributed Ultra WideBand Medium Access Control protocol by the host and the at least one connected device ([0018] coordinator beaconing according to a pre-determined protocol and some of the exemplary protocols are described in [0026], Which includes 802.15.3 under which Ultra WideBand Medium Access Control protocol falls); receiving Device Notification Traffic by the host ([0026] coordinator receiving traffic request); and operating the WUSB network by the host according to the capabilities of the connected devices (i.e. see [0026][0027] [0030][0041]), wherein an offset field and a duration field in a Distributed Reservation

Protocol are set to a predetermined value if distributed reservation is supported ([0034]-[0035] reservation is established using offset and duration values).

Young discloses reservations are set to a predetermined value but does not explicitly disclose reservations are set to a multiple of a predetermined value. Choi disclose reservations are set to a multiple of a predetermined value ([0048] multiple of time slots).

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify the invention of Young, to set the reservation time a multiple of a set value, as taught by Choi, thus allowing a more efficient way of utilizing time slots ([0052]).

Regarding claim 20, Young discloses a host apparatus for host-device communication in a first Wireless Universal Serial Bus (WUSB) network including the host and at least one connected device(at least see Abstract, [0026]-[0027]), comprising: a transmitter for sending beacons, traffic notifications, medium reservations and data ([0026]-[0027] coordinator sending information therefore a transmitter); a receiver for receiving beacons, traffic notifications, medium reservations and data ([0026]-[0027] coordinator receiving information therefore a receiver); a host data transfer processing component that processes data transferred between the host and the at least one connected device ([0026]-[0027]); and a controller operably coupled to the transmitter (i.e. Abstract [0026]-[0027]), receiver and host data transfer processing component and configured to direct the transmitter ([0026]-[0027]), receiver and host data transfer processing component to start beaconing according to a

distributed Ultra WideBand Medium Access Control (UWB MAC) protocol and announce host capabilities ([0026]-[0027]), receive and process according to a distributed UWB MAC protocol([0018] coordinator beaconing according to a pre-determined protocol and some of the exemplary protocols are described in [0026]), beacons of the at least one connected device including capabilities of the at least one device ([0040][0041]), receive and process Device Notification Traffic (DNT traffic) ([0026]-[0027]), and start and control WUSB operation of the network([0026]-[0027]), wherein the controller directs the device data transfer processing component to set an offset field and a duration field in each DRP reservation to a predetermined value if distributed reservation is supported ([0034]-[0035] reservation is established using offset and duration values).

Young discloses reservations are set to a predetermined value but does not explicitly disclose reservations are set to a multiple of a predetermined value. Choi disclose reservations are set to a multiple of a predetermined value ([0048] multiple of time slots).

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify the invention of Young, to set the reservation time a multiple of a set value, as taught by Choi, thus allowing a more efficient way of utilizing time slots ([0052]).

Regarding claim 28, Young discloses a method for host-device communication in a Wireless Universal Serial Bus (WUSB) network including a host and at least one connected device (at least see Abstract, [0026][0027]), comprising:

beaconing according to a distributed Ultra WideBand Medium Access Control (UWB MAC) protocol by the host and the at least one connected device([0026]-[0027]); the host establishing a multicast reservation between the host and the at least one connected device([0026]-[0027][0029][0034]); and running a WUSB protocol inside the multicast reservation([0026]-[0027][0034]), wherein an offset field and a duration field in a Distributed Reservation Protocol (DRP) are set to a predetermined value if distributed reservation is supported ([0034]-[0035] reservation is established using offset and duration values).

Young discloses reservations are set to a predetermined value but does not explicitly disclose reservations are set to a multiple of a predetermined value. Choi discloses reservations are set to a multiple of a predetermined value ([0048] multiple of time slots).

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify the invention of Young, to set the reservation time a multiple of a set value, as taught by Choi, thus allowing a more efficient way of utilizing time slots ([0052]).

Regarding claim 36, Young discloses a method for host-device communication in a Wireless Universal Serial Bus (WUSB) network including a host and at least one connected device(at least see Abstract, [0026][0027]), comprising:  
beaconing according to a distributed Ultra WideBand Medium Access Control (UWB) MAC protocol by the host and the at least one connected device ([0018] coordinator beaconing according to a pre-determined protocol and some of the exemplary protocols

are described in [0026]); establishing unicast reservations between the host and the at least one connected device ([0026]-[0027]); and running a WUSB protocol inside the unicast reservations ([0026]-[0027][0034]).

Regarding claims 6, 35, 40 and 45, Young discloses the method of claim 1, further comprising the at least one connected device discovering the host via the host beacon ([0029][0030]).

Regarding claims 14 and 15, Young discloses the method of claim 13, further comprising the at least one connected device acting as a host in a second WUSB network and performing at least some of the steps performed by the host of the first WUSB network ([0050]-[0056]).

3. Claims 4, 7-10, 12, 21, 24-25, 33, 37-38, 41 and 43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Young, in view of Choi, further in view of Gu et al. (US 2005/0052995)

Regarding claim 41, Young discloses a method for host-device communication in a Wireless Universal Serial Bus (WUSB) network including a host and at least one connected device (at least see Abstract, [0026][0027]), comprising:  
beaconing according to a distributed Ultra WideBand Medium Access Control (UWB MAC) protocol by the host and the at least one connected device ([0018] coordinator beaconing according to a pre-determined protocol and some of the exemplary protocols are described in [0026]).

Young fails to disclose the host polling the at least one connected device to request that the at least one connected device transmit data; and the host receiving



data from the at least one connected device as a result of the poll. Choi teaches discloses the host polling the at least one connected device to request that the at least one connected device transmit data; and the host receiving data from the at least one connected device as a result of the poll ([0011]-[0013]).

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify the invention of Young, to have the host to poll the devices to transmit data, as taught by Choi, thus allowing a collision free data transmission without contention between devices ([0011]).

Young discloses the host using contention free to access medium ([0005]) but fails to disclose the host using an Enhanced Distributed Channel Access (EDCA) mechanism to access the medium; Choi teaches the host using a contention based mechanism to access media (Choi's [0010][0017]) but fails to disclose the hosting using an Enhanced Distributed Channel Access mechanism to access the medium. Gu teaches the hosting using an Enhanced Distributed Channel Access mechanism to access the medium (see Gu's [0007][0008][0035]).

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify the invention of Young and Choi, to incorporate priority to contention windows to differentiate packets, as taught by Gu, thus allowing an improved mechanism to give priority to treat data packets differently based on their priorities (Gu's [0007][0008]).

Regarding claims 4, 7-10, 12, 24-25, 33, 37-38 and 43, combination of Young, Choi and Gu teaches using signaling in the beacons to indicate traffic, using reservation

to reserve time slots for data transmission, using both contention based and contention free mechanisms to access media.

Regarding claim 21, combination of Young, Choi and Gu discloses the host apparatus of claim 20, wherein the controller is further configured to direct the transmitter, receiver and host data transfer processing component to: include multicast Distributed Reservation Protocol (DRP) in beacons and then start micro-scheduling operation if multicast DRP is supported; receive and process DNT traffic and if only unicast DRP is supported by the connected device negotiate unicast DRP with the at least one connected device and then start WUSB operation; and receive and process DNT traffic and if only Enhanced Distributed Channel Access is supported by the connected device start WUSB operation with poll frame using EDCA.

4. Claims 3, 13, 23, 26-27, 29-30 and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Young, in view of Choi and further in view of IEEE Std 802.15.3-2003, hereinafter referred to as IEEE.

Regarding claims 3, 23 and 32, Young in view of Choi discloses the method of claim 1, but fails to teach the method wherein the predetermined value is 625μsec. IEEE teaches the predetermined value (section 7.5.6.1, time unit is user specific and can be any value in the range of [0, 65535]μsec and 625μsec is within this range).

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify the invention of Young in view of Choi, to specify a time slot for reservation suitable for the wireless network, as taught by IEEE, thus allowing a more efficient use of time slots.

Regarding claims 13, 26, 27 and 30, combination of Young and Choi discloses requesting reservation for data transmission but fails to disclose initiating a second reservation request when the first request is not accepted. IEEE teaches initiating a second reservation request when the first request is not accepted (at least see section 8.5.1.1).

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify the invention of Young and Choi, to request a reservation second time if the first request is denied, as taught by IEEE, thus providing a better mechanism for allowing non-accepting devices to make a reservation for data transmission (section 8.5.1.1).

Regarding claim 29, combination of Young, Choi and IEEE discloses the method of claim 28, wherein the establishing and running each further comprise reserving channel resources by inclusion of a multicast reservation information element in beacons to achieve a first reservation; micro-scheduling the channel resources of the multicast reservation among those connected devices of the at least one connected device that accepted the multicast reservation; and receiving data from the at least one connected device.

#### **(10) Response to Argument**

##### **TECHNOLOGY BACKGROUND**

Wireless Universal Serial Bus (WUSB) network is a type of wireless network. WUSB is a logical evolution of USB because it provides mobility to the connected devices and flexibility in deployment. Different from a wire USB system, the WUSB

system does not have a hub in the connection structure between the host and the devices, but instead the host makes logically connections to the devices. The host plays an important role in coordinating the network, such as initiating data transfers with the devices of the cluster, receiving requests from the devices, providing traffic schedules for the devices, and allocating time slots and bandwidths to the individual devices.

The Ultra Wideband frequency bands from 3.1 to 10.6 GHz are used for the wireless communication channel. Ultra-wideband (UWB) transmission is a technology of high-rate with low-transmission power. In a wireless network of UWB, medium access control (MAC) is essential to coordinate the channel access among competing devices. The network host coordinates traffics by following UWB MAC protocol.

#### **SUMMARY OF APPELLANT'S ARGUMENT AND EXAMINER'S RESPONSE TO ARGUMENT**

Appellant argues with respect to claim 1 that the prior art of record does not teach or suggest the distributed Ultra WideBand Medium Access Control protocol.

The examiner respectfully disagrees. First of all, The prior art of record Young discusses an analogous host-device communication network that is applicable to any protocol so long as the mechanisms of the operating the network are the same or similar to that of IEEE 802.15.3 ([0004]) and UWB falls under that category. Secondly, the Ultra Wideband (UWB) technology is one of many types of wireless communication technology that is high in data rate and low in transmission power, and is one of many similar technologies (Bluetooth, for example) running over common platform of IEEE 802.15.3. UWB is merely a radio technology that can be used as part of an overall

standard. Thirdly, the examiner wants to point out that by simply repeating the well known steps of operating a network using a slightly newer protocol is not patentable.

Therefore the examiner contends that Young teaches or suggests the Ultra WideBand Medium Access Control protocol.

Appellant also argues with respect to claim 1 that the prior art of record does not teach or suggest the start time is a multiple of any predetermined value.

The examiner respectfully disagrees. In a wireless communication network a data transmission starts at the beginning of a time slot and continues until the end of a time slot. The next transmission starts after the previous transmission and at the beginning of a new time slot. Therefore the next start time will always be a point after some time slots, which is shown in reference Young ([0034]-[0036]) where Young discusses a transmission starts at the end of the previous transmission. Choi is brought to show the transmission interval may be multiple of time slots ([0048]).

Therefore the examiner contends that the combination of Young and Choi indeed teaches the start time is a multiple of any predetermined value, and in this case, multiple of a time slot.

#### **DETAILS OF APPELLANT'S ARGUMENT AND EXAMINER'S RESPONSE**

**Brief pages 7-12: Appellant argues claims 1, 6, 14, 15, 20, 28, 35, 36, 40 and 45 are not properly rejected under 35 U.S.C 103(a) over Young in view of Choi.**

Brief page 8, with respect to claim 1, appellant challenges the assertion that UWB MBOA MAC defined in "MBOA Wireless Medium Access Control Specification for High Rate Wireless Personal Area Networks, Technical Specification, Draft 0.5, April

2004", which is hereby incorporated by reference, is referred to as IEEE standards 802.15.3. The examiner disagrees. First of all, "MBOA Wireless Medium Access Control Specification for High Rate Wireless Personal Area Networks, Technical Specification, Draft 0.5, April 2004" has never been provided to the examiner. After diligently searched for such reference (using all available resources including employing PTO search specialist) without success, the examiner specifically requested appellant to submit such reference on April 29, 2008 (see Office Action pages 2-3). The applicant has never submitted such reference till this day. Instead, the appellant submitted IEEE standard 802.15.3 as a reference. The examiner has made the best effort to interpret to claim language in light of appellant's specification and references available to the examiner.

Brief page 9, appellant argues that the prior art of record does not teach or suggest the distributed Ultra WideBand Medium Access Control protocol. The examiner respectfully disagrees. First of all, the Ultra Wideband (UWB) technology is one of many types of wireless communication technology that is high in data rate and low in transmission power, and is one of many similar technologies (Bluetooth, for example) running over common platform of IEEE 802.15.3. UWB is merely a radio technology that can be used as part of an overall standard. The prior art of record Young discusses an analogous host-device communication network that is applicable to any protocol so long as the mechanisms of the operating the network are the same or similar to that of IEEE 802.15.3 ([0004]) and UWB falls under that category. Secondly, for the sake of argument, even if UWB MAC was not disclosed in the prior art (which is not admitted),

by simply repeating the well known steps of operating a network but merely using a slightly newer protocol is not patentable. Therefore the examiner contends that Young indeed teaches the Ultra WideBand Medium Access Control protocol.

Brief page 10, appellant argues that the prior art of record does not teach or suggest the start time is a multiple of any predetermined value. The examiner respectfully disagrees. It is well known in the art the data transmission starts at the beginning of a time slot and the actual transmission may takes up multiple of time slots. The next transmission starts at the end of the previous transmission which is at the end of the allocated time slots. Therefore the next start time will always be a point after multiple time slots, as shown in reference Young in view of Choi. Young discusses a transmission starts at the end of the previous transmission ([0034]-[0036]) and Choi discusses transmission interval may be multiple of time slots ([0048]). Therefore the examiner contends that the combination of Young and Choi indeed teaches the start time is a multiple of any predetermined value, and in this case, multiple of a time slot.

Brief pages 11-12, appellant makes similar arguments with respect to claims 20, 28, and 36. The examiner has addressed these arguments above.

Brief page 12, appellant makes similar arguments with respect to claims 6, 14, 15, 35 and 45. The examiner has addressed these arguments above. Appellant also argues that rejection of claim 45 is improper. The examiner respectfully disagrees. Claim 45 is a repeated claim as claim 40 which is rejected. Therefore claim 45 does not hold any merits for being patentable.

**Brief pages 12-13: Appellant argues claims 4, 7-10, 12, 21, 24, 25, 33, 37, 38, 41 and 43 are not properly rejected under 35 U.S.C 103(a) over Young in view of Choi, further in view of Gu.**

Brief pages 11-12, appellant makes similar arguments with respect to claims 41. The examiner has addressed these arguments above.

Brief page 12, appellant argues that Gu does not cure the deficiencies present in Young and Choi with respect to claims 1, 20, 28, 36 and 41. The examiner respectfully disagrees. The dependent claims 4, 7-10, 12, 21, 24, 25, 33, 37, 38 and 43 recite additional limitations that are not specifically disclosed in the independent claims, and therefore Gu is brought to show all limitations. Therefore Gu does cure the deficiencies present in Young and Choi with respect to claims 1, 20, 28, 36 and 41.

**Brief pages 13-14: Appellant argues claims 3, 13, 23, 26, 27, 29, 30, and 32 are not properly rejected under 35 U.S.C 103(a) over Young in view of Choi, further in view of IEEE.**

Brief page 14, appellant argues that IEEE does not cure the deficiencies present in Young and Choi with respect to claims 1, 20, and 28. The examiner respectfully disagrees. The dependent claims 3, 13, 23, 26, 27, 29, 30 and 32 recite additional limitations that are not specifically disclosed in Young and Choi, and IEEE is brought to show all limitations in the dependent claims. Therefore IEEE does cure the deficiencies present in Young and Choi with respect to claims 1, 20, and 28.

**(11) Related Proceeding(s) Appendix**



No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

/KATHY WANG-HURST/

Examiner, Art Unit 2617

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